In the Claims:

1. – 12. **(Canceled)**

13. **(Currently Amended)** A method for sensing a portion of a nanoscale moiety, comprising:

(a) providing a substrate having an excitable molecule adjacent to a nanopore; and

(b) moving a portion of a nanoscale moiety **comprising** ~~with~~ a quencher molecule past the excitable molecule to quench the excitable molecule and determine the identity of the portion of the nanoscale moiety,

wherein the quencher molecule is different from the nanoscale moiety.

14. **(Currently Amended)** A method for sensing a portion of a nanoscale moiety, comprising:

(a) providing a substrate having an excitable molecule adjacent to a nanopore;

(b) exciting the excitable molecule;

(c) moving a portion of the nanoscale moiety **comprising** ~~with~~ a quencher molecule past the excitable molecule to quench the ~~quencher~~ **excitable** molecule and determine the identity of the portion of the nanoscale moiety,

wherein the quencher molecule is different from the nanoscale moiety.

15. **(New)** The method of claim 13, wherein the excitable molecule is selected from the group consisting of an ion, a monomer, an atom, a metal, a halide, an amino acid, a nucleotide, a simple sugar, a quantum dot, and a nanosphere.

16. **(New)** The method of claim 13, wherein the nanoscale moiety comprises a biopolymer.

17. **(New)** The method of claim 16, wherein the biopolymer is selected from the group consisting of a polypeptide, a polynucleotide, a synthetic polymer, a non synthetic polymer and a polysaccharide.

18. **(New)** The method of claim 17, wherein the polynucleotide is selected from the group consisting of deoxyribonucleic acid (DNA), ribonucleic acid (RNA), single stranded DNA, single stranded RNA, double stranded RNA, double stranded DNA, DNA complexed to RNA, DNA bound to protein, RNA bound to protein, transfer RNA (tRNA), and messenger RNA (mRNA).

19. **(New)** The method of claim 13, wherein the nanopore is from 1 nanometer to 10 nanometers in diameter.

20. **(New)** The method of claim 13, wherein the excitable molecule comprises a chromophore.

21. **(New)** The method of claim 13, wherein the excitable molecule comprises a fluorophore.

22. **(New)** The method of claim 21, wherein the fluorophore is selected from the group consisting of an aromatic amino acid, a nucleic acid, a derivatized nucleic acid, fluorescein, a quantum dot and coumarin.

23. **(New)** The method of claim 13, wherein the quencher molecule is selected from the group consisting of cesium chloride, potassium iodide, quinaldic acid, acrylamide, pyridine, 8-anilinonaphthalene-1-sulfonate (ANS).

24. **(New)** The method of claim 14, wherein the excitable molecule is selected from the group consisting of an ion, a monomer, an atom, a metal, a halide, an amino acid, a nucleotide, a simple sugar, a quantum dot, and a nanosphere.

25. **(New)** The method of claim 14, wherein the nanoscale moiety comprises a biopolymer.

26. **(New)** The method of claim 25, wherein the biopolymer is selected from the group consisting of a polypeptide, a polynucleotide, a synthetic polymer, a non synthetic polymer and a polysaccharide.

27. **(New)** The method of claim 26, wherein the polynucleotide is selected from the group consisting of deoxyribonucleic acid (DNA), ribonucleic acid (RNA), single stranded DNA, single stranded RNA, double stranded RNA, double stranded DNA, DNA complexed to RNA, DNA bound to protein, RNA bound to protein, transfer RNA (tRNA), and messenger RNA (mRNA).

28. **(New)** The method of claim 14, wherein the nanopore is from 1 nanometer to 10 nanometers in diameter.

29. **(New)** The method of claim 14, wherein the excitable molecule comprises a chromophore.

30. **(New)** The method of claim 14, wherein the excitable molecule comprises a fluorophore.

31. **(New)** The method of claim 30, wherein the fluorophore is selected from the group consisting of an aromatic amino acid, a nucleic acid, a derivatized nucleic acid, fluorescein, a quantum dot and coumarin.

32. **(New)** The method of claim 14, wherein the quencher molecule is selected from the group consisting of cesium chloride, potassium iodide, quinaldic acid, acrylamide, pyridine, 8-anilinonaphthalene-1-sulfonate (ANS).